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LICORICE FLAVORING - RAPID ANALYSES OF SUGARS AND GLYCYRRHIZIN USING MODERN INSTRUMENTAL METHODS.

R. J. Morris, Jr., and C. Romano, MacAndrews and Forbes Company, Camden, New Jersey.

ABSTRACT

In this country, about 90 percent of the licorice flavoring is used by the tobacco industry as an ingredient in tobacco casing liquor. The most recent scheme of analysis for licorice was proposed by Dr. Percy Houseman in 1922. Recent efforts to up-date these methods have resulted in a rapid gas chromatographic analysis for sugars based on the silyl ether derivative technique developed by Sweeley and coworkers, and an infrared spectrophotometric analysis for glycyrrhizin using aqueous solutions. These analyses require about 45 minutes each and the Houseman methods require 2-½ hours for sugars and 3 days for glycyrrhizin. The calibration of the instrumental methods is presently based on the Houseman assay so as to do as little violence as possible to the 43 years of accumulated data. The precision of the G. C. method for sugars is: reducing sugars ±0.3% and cane sugar ±0.3%, while the Houseman assay gives a precision of ±0.3% for reducing and ±0.5% for cane sugars, respectively. The precision of the IR method for glycyrrhizin is ±0.7%, while the Houseman assay gives ±0.3%. It is felt that the savings in time per analysis compensate for the apparent loss of the precision of the glycyrrhizin method. Present work is directed toward the determination of individual sugars and the determination of glycyrrhizinate content using pure standards.

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